

Fig. 1

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Fig. 2A

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Fig. 2B (sheet 1 of 3)

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Fig. 2B (sheet 2 of 3)

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Fig. 2B (sheet 3 of 3)

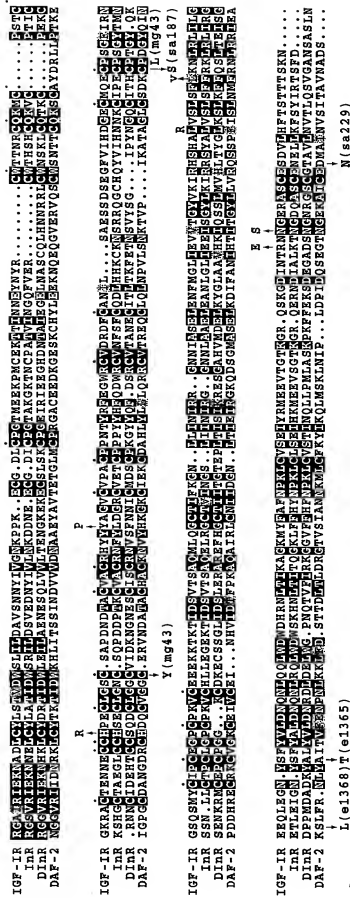


Fig. 2C (sheet 1 of 2)

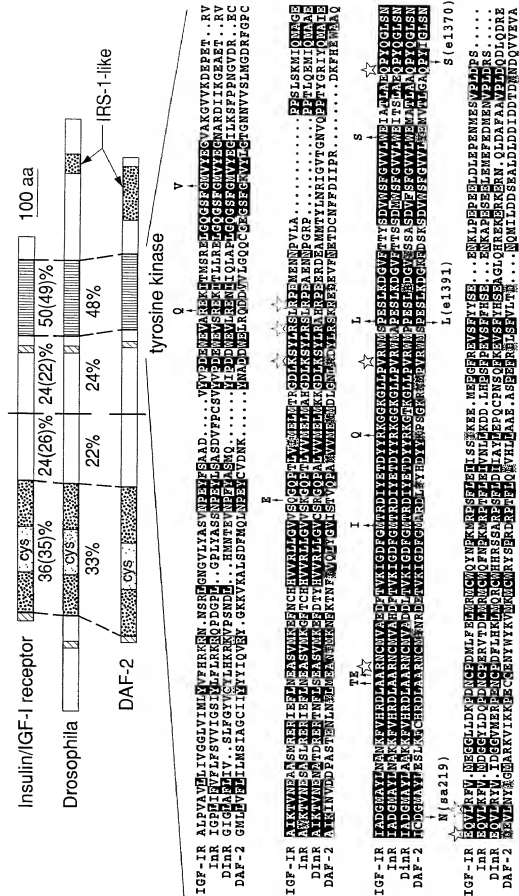


Fig. 2C (sheet 2 of 2)

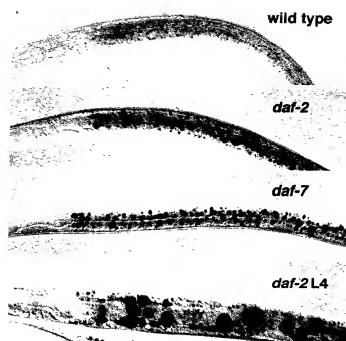


Fig. 3

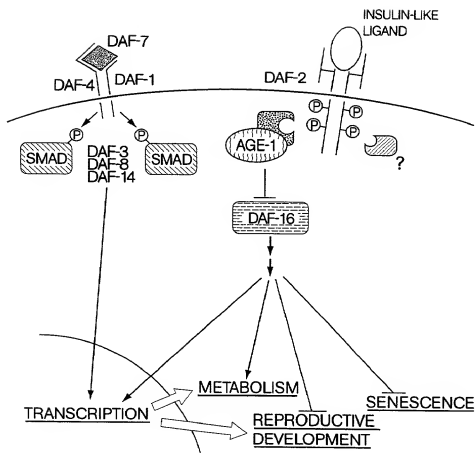


Fig. 4

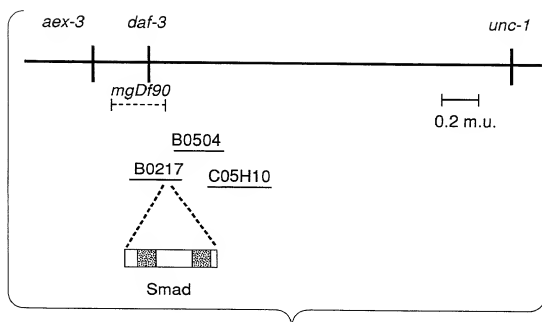


Fig. 5A

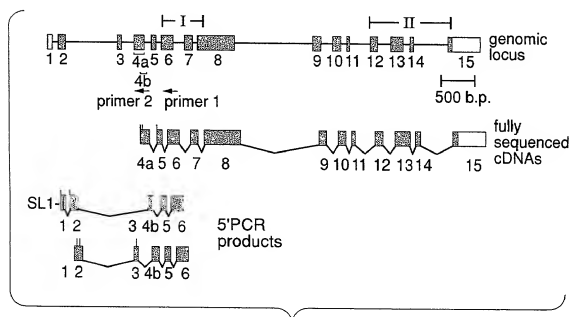


Fig. 5B

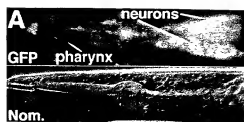


Fig. 6A

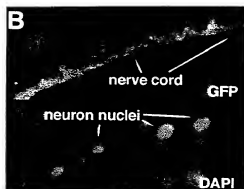


Fig. 6B



Fig. 6C

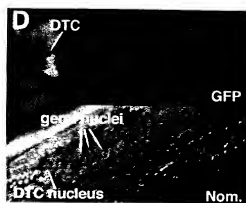


Fig. 6D

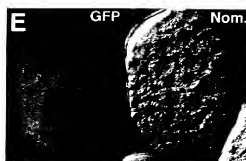


Fig. 6E

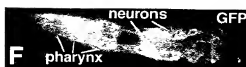


Fig. 6F

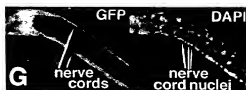


Fig. 6G

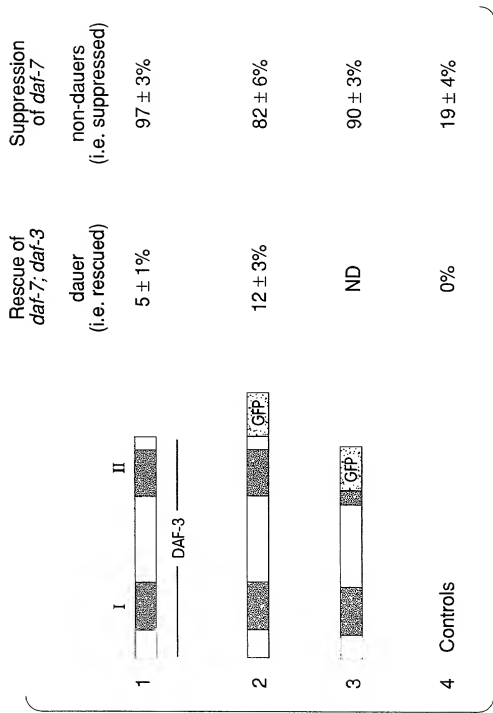


Fig. 7



Fig. 8A

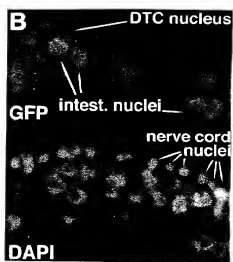


Fig. 8B

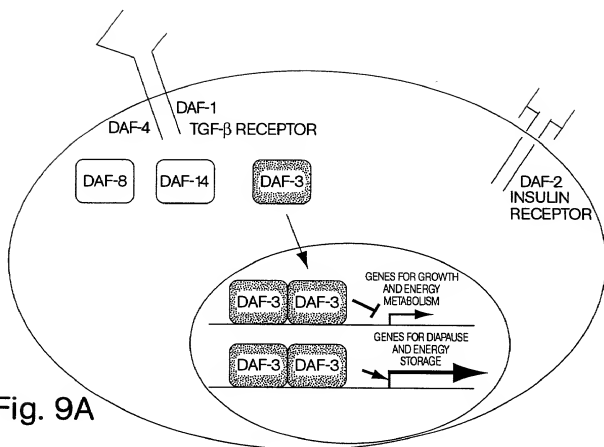


Fig. 9A

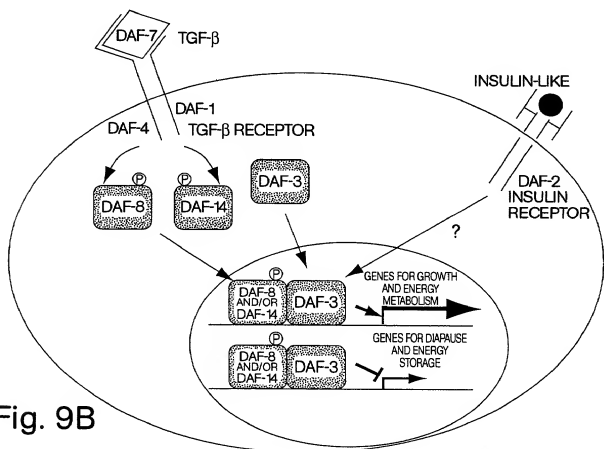


Fig. 9B




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Fig. 11A (sheet 1 of 2)

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Fig. 11A (sheet 2 of 2)

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151 gaaaaccttc  tcatggattg  gaagatattc  ctgatgtaga  ggaatatgag
201 aggaacctgc  tcggggctgg  agcaggtttt  aatctgctca  atgtaggaaa
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301 caactacaaa  gattctacaa  cggagtggta  ttaaaatgga  aatccgcgca
351 tatttgatgc  cagacagtca  ggatgatgac  ccggaagatg  gtgtcaacta
401 cccggatcca  gatttatttg  acacaaaaaa  cacaaatatg  accgagtacg
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501 aagatcgaag  ttcccgcgc  tagtgcgcgc  ccaaacaaaa  ttgtagaata
551 tttgatgtat  tatagaactg  taaaagaaag  tgaactcata  caactgaatg
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701 gaaggataag  aagaatgatc  tccagaacct  gattgatgtg  gttctttcaa
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901 actgcaagca  cgcatttgaa  atgaaaaatg  acatggtatg  cgtgaaatcc
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1551 gggcaccaag  gtcaggatcc  gaatgatcca  ccaatttcaa  gaccagtgtt
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1951 ttggcgagaa  aaaatgttcg  agaggaaatt  tccacgtgga  tggcggaattc
2001 atttgctctg  agaatcgtaa  cagttctcgga  cttgagccaa  atccaaattag
2051 agaaccagtg  gcgtttaaag  ttcgtaaaag  aatagtggat  ggaattcgct

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Fig. 11B (sheet 1 of 2)

2101 tttcctacaa aaaagacggg agtgtttggc ttcaaaaccg catgaagtac
 2151 ccgggtatttg tcacttctgg gtatctcgac gagcaatcag gaggcctaaa
 2201 gaaggataaa gtgcacaaag tttaacggatg tgcgtctatc aaaacgtttg
 2251 gcttcaacgt ttccaaacaa atcatcagag acgcgcttct ttccaagcaa
 2301 atggcaacaa tgtacttgca aggaaaattg actccgatga attatatcta
 2351 cgagaagaag actcaggaag agctgcgaag ggaagcaaca cgcaccactg
 2401 attcattggc caagtactgt tgtgtccgtg tctcgttctg caaaggattt
 2451 ggagaagcat acccagaacg cccgtcaatt catgattgtc cagtttggat
 2501 tgagttgaaa atcaacattg cctacgattt catggattca atctgccagt
 2551 acataaccaa ctgcttcgag ccgctaggaa tggaagattt tgcaaaattg
 2601 ggaatcaacg tcagtgatga ctaaatgata acttttttca ctcaccctac
 2651 tagatactga tttagtctta ttccaaatca tccaacgata tcaaactttt
 2701 tcctttgaac ttgtcatact atgttatcac aagttccaag cagtttcaat
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 2801 gttcattgtg agctttgagc tgtatagaag gacaatgtat cccatacctc
 2851 aatctttaat agtcatcagt cactgggtccc gcaccaattt tttcgattcg
 2901 catatgtcat atattgcacc gtggcccttt ttattgtaac ttttaatata
 2951 ttttcttccc aacttgtgaa tatgattgat gaaccaccat tttgagtaat
 3001 aaatgtattt tttgtgg

Fig. 11B (sheet 2 of 2)

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1 gtaatcaaat tgtaaaggaa aaatattaat agtcagagta cacataaatg
51 ggtgatcatc ataatttaac gggccttccc ggtacctcca tcccgccaca
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151 gaaaaccttc tcatggattg gaagatattc ctgatgtaga ggaatatgag
201 aggaacctgc tcggggctgg agcaggtttt aatctgctca atgtaggaaa
251 tatggctaata gaatttaaac caataatcac attggacacg aaaccacctc
301 gtgatgccaa caagtcatcg gcaattcaatg cgggggttaa gctaatacact
351 ccgaaaactg aagttcccgga cgagcacaca ccgatgatgt caccagtga
401 tacaactaca aagattctac aacggagtgg tattaaaaatg gaaatccgcg
451 catatttgga tccagacagt caggatgatg acccggaaga tgggtgcaac
501 taccgggatc cagatttatt tgacacaaaa aacacaaaata tgaccgagta
551 cgatttggat gtgttgaagc ttggaaaacc agcagtagat gaagcacgga
601 aaaagatcga agttcccgac gctagtgcgc cgccaaaacaa aattgtagaa
651 tatttgatgt attatagaac gttaaaagaa agtgaactca tacaactgaa
701 tgcgtatcgg acaaaacgaa atcgaattatc gttgaacttg gtcaaaaacaa
751 atattgatcg agagttcgac caaaaaagctt cgcagtcctt ggtgaaaaaa
801 ttgaaggata agaagaatga tctccagaac ctgattgatg tggttctttc
851 aaaaggtaca aaatataccg gttgcattac aattccaagg acacttgatg
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1651 cagggcacca aggtcaggta ccgaatgatc caccaatttc aagaccagtg
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1751 gcacatttga aatcgatttt ttgaaggaga aagtgaacaa tccggcgcaa
1801 taattcggtc tagtaacaaa ttcattgaag aatttgattc gccgatttgt
1851 ggtgtgacag ttgttcgacc gcggatgaca gacggtgagg ttttggagaa
1901 catcatgccg gaagatgcac catatcatga catttgaag tctcatttga
1951 ggctcacatc agaaaagtga actttctcag gagagggggc agaagttagt
2001 gatttgaacg aaaaatgggg aacaatttg tactatgaga aaaaatttga
2051 aattggcgag aaaaaatggt cgagaggaaa tttccacgtg gatggcggat

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Fig. 11C (sheet 1 of 2)

2101	tcatttgctc	tgagaatcgt	tacagtcctc	gacttgagcc	aatccaatt
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2201	cttttcctac	aaaaaagacg	ggagtgtttg	gcttcaaaac	cgcatagaat
2251	acccggtatt	tgtcacttct	gggtatctcg	acgagcaatc	aggaggccta
2301	aagaaggata	aagtgcacaa	agtttacgga	tgtgcgtcta	tcaaaacggt
2351	tggcttcaac	gtttccaaac	aatcatcag	agacgcgctt	ctttccaagc
2401	aatggcaac	aatgtacttg	caaggaaaat	tgactccgat	gaattatatc
2451	tacgagaaga	agactcagga	agagctgcga	agggaaagca	cacgcaccac
2501	tgattcattg	gccaagtact	gttgtgtccg	tgtctcgttc	tgcaaaggat
2551	ttggagaagc	ataccagaa	cgcctgtcaa	ttcatgattg	tccagtttgg
2601	attgagttga	aaatcaacat	tgccctacgat	ttcatggatt	caatctgcca
2651	gtacataacc	aactgcttcg	agccgctagg	aatggaagat	tttgcaaaat
2701	tgggaatcaa	cgtcagtgat	gactaaatga	taactttttt	cactcaccct
2751	actagatact	gatttagtct	tattccaaat	catccaacga	tatcaaactt
2801	tttcctttga	actttgcata	ctatgttatc	acaagttcca	agcagtttca
2851	atacaaacat	aggatatgtt	aacaactttt	gataagaatc	aagttacca
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2951	tcaatcttta	atagtcatca	gtcactggtc	cgcaccaat	tttttcgatt
3001	cgcataatgc	atatattgca	ccgtggccct	ttttattgta	acttttaata
3051	tattttcttc	ccaacttggt	aatatgattg	atgaaccacc	attttgagta
3101	ataaatgtat	tttttggg			

Fig. 11C (sheet 2 of 2)

1	MKLIATSLLV	PDEHTPMMSP	VNTTTKILQR	SGIKMEIPPY	LDPDSQDDDP
51	EDGVNYPDPD	LFDTKNTNMT	EYDLDLVLKL	KPAVDEARKK	IEVPDASAPP
101	NKIVEYLMY	RTLKESELIQ	LNAYRTRKRN	LSLNLVRNNI	DREFDQKACE
151	SLVKKLKDKK	NDLQNLIDVV	LSKGTKYTGC	ITIPRTL DGR	LQVHGRKGFP
201	HVVYGLWRF	NEMTKNETRH	VDHCKHAFEM	KSDMVCVNPY	HYEIVIGTMI
251	VGQRDHDNRD	MPPPHQRYHT	PGRQDPVDDM	SRFIPPASIR	PPPMNMHTRP
301	QPMPQQLPSV	GATFAHFLPH	QAPHNPGVSH	PYSIAPQTHY	PLNMNPI PQM
351	PQMPQMPPPL	HQGYGMNGPS	CSSENNPFH	QNHHYNDISH	PNHYSYDCGP
401	NLYGFPTYP	DFHHFPNQQP	HQPFQLSQNH	TSQQGSHQPG	HQQQVPNDPP
451	ISRPVLQPST	VTLDVFRRYC	RQTFGNRFFE	GESEQSGAII	RSSNKFIEEF
501	DSPICGVTVV	RPRMTDGEVL	ENIMPEDAPY	HDICKFILRL	TSESVTFSGE
551	GPEVSDLNEK	WGTIVYYEKN	LQIGEKKCSR	GNFHVDGGFI	CSENRYSLGL
601	EPNPIREFVA	FKVRKAIVDQ	IRFSYKKDGS	VWLQNRMKYP	VFVTSGYLDE
651	QSGGLKKDKV	HKVYGCASIK	TFGFNVSKQI	IRDALLSKQM	ATMYLQGLT
701	PMNYIYEKKT	QEELRREATR	TTDSLAKYCC	VRVSFCKGFG	EAYPERPSIH
751	DCPVWIELKI	NIAYDFMDSI	CQYITNCFEP	LGMEDFAKLG	INVSDD

Fig. 12A

1 MGDHNLTLGL PGTSIPPQFN YSQPGTSTGG PLYGGKPSHG LEDIPDVEEY
 51 ERNLLGAGAG FNLLNVGNMA NVPDEHTPMM SPVNTTTKIL QRSIGKMEIP
 101 PYLDPDSQDD DPEDGVNYPD PDLFDTKNTN MTEYDLDLVK LGKPAVDDEAR
 151 KKIEVPDASA PPNKIVEYLM YYRTLKESEL IQLNAYRTKR NRLSLNLVKN
 201 NIDREFDQKA CESLVKKLKD KKNDLQNLID VVLSKGTKYT GCITIPRTLD
 251 GRLQVHGRKG FPHVVYGLW RFNEMTKNET RHVDHCKHAF EMKSDMVCVN
 301 PYHYEIVIGT MIVGQRDHDN RDMPPPHQRY HTPGRQDPVD DMSRFIPPAS
 351 IRPPPMNMHT RPQMPQQLP SVGATFAHPL PHQAPHNPGV SHFYSIAPQT
 401 HYPLNMNPIP QMPQMPQMP PLHQGYGMNG PSCSSENNNP FHQNNHYNDI
 451 SHFNHYSYDC GPNLYGFPTP YPDFHHFFNQ QPHQPPQLSQ NHTSQQGS HQ
 501 PGHQGQVPND PPISRPVLQP STVTLDVFR YCRQTFGNRF FEGESEQSGA
 551 IIRSSNKFIE EFDSPICGVT VVRPRMTDGE VLENIMPEDA PYHDICKFIL
 601 RLTSSEVTFS GEGPEVSDLN EKWGTIVYYE KNLQIGEKKC SRGNFHV DGG
 651 FICSENRYSL GLEPNPIREP VAFKVRKAIV DGIRFSYKGD GSVWLQNRMK
 701 YPVFVTSYL DEQSGGLKKD KVHKVYGCAS IKTFGFNVSK QIIRDALLSK
 751 QMATMYLQGK LTFPMNYIEK KTQEELRREA TRTDSLAKY CCVRVSFCKG
 801 FGEAYPERPS IHDCPVWIEL KINIAYDFMD SICQYITNCF EPLGMEDFAK
 851 LGINVSD

Fig. 12B

1 MGDHNNLTGL PGTSIPPQFN YSQPGTSTGG PLYGGKPSHG LEDIPDVEEY
 51 ERNLLGAGAG FNLLNVGNMA NEFKPIITLD TKPPRDANKS LAFNGGLKLI
 101 TPKTEVPDEH TPMMSPVNTT TKILQRSGIK MEIPPYLDPD SQDDDPEDGV
 151 NYPPDFDLFD KNTNMTEYDL DVLKLGKPAV DEARKKIEVP DASAPPNKIV
 201 EYLMYYRTLK ESELIQLNAY RTKRNRLSLN LVKNNIDREF DQKACESLVK
 251 KLKDKKNDLQ NLIDVVLKSG TKYTGCITIP RTLDGRLQVH GRKGFPFHVY
 301 GKLWRFNEMT KNETRHVDHC KHAFEMKSDM VCVNPHYEI VIGTMIVGQR
 351 DHDNRDMPPP HQRVHTPGRQ DPVDDMSRFI PPASIRPPPM NMHTRPQPMP
 401 QQLPSVGATF AHPLPHQAPH NPGVSHPYSI APQTHYPLNM NPIPQMPQMP
 451 QMPPLHQGY GMNGPSCSSE NNNPFHQNH YNDISHPNHY SYDCGPNLYG
 501 FPTPYPDFHH PFNQPHQPP QLSQNHTSQ GSHQPGHQGQ VPNDPPISRP
 551 VLQPSTVTL D VFRYCRQTF GNRFFEGESE QSGAIRSSN KFIEEFDSP
 601 CGVTVVPRM TDGEVLENIM PEDAPYHDIC KFILRLTSES VTFSGEGPEV
 651 SDLNEKWGTI VYYEKNLQIG EKKCSRGNFH VGGGFCSEN RYSLGLEPNP
 701 IREPVAFKVR KAIVDGIRFS YKDGSVWLQ NRMKYPVFT SGYLDEQSGG
 751 LKDKDVHKVY GCASIKTFGF NVSKQIIRDA LLSKQMATMY LQGKLTPMNY
 801 IYEKKTQEEL RREATRTDS LAKYCCVRVS FCKGFGEAYP ERPSIHDCPV
 851 WIELKINIAY DFMDSICQYI TNCFEPLGME DFAKLGINVS DD

Fig. 12C

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Fig. 13A

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agcatattcattttgatgttgaattctcttctattttgttccctgggtgtgttcgaagagagatagcaaaagcagcga
ggagtgagaatcttccgtctcatcttttcaaatccctacctacacacactcaacgatcatcacagccagaccatcaat
attcttcaaaattttgacgtcgttaatttttttcagtttttcaaaaactctattttctattttctgtcgtttgttccc
ctttctctcgtcaattccaacacattcatccagtgacgtcgtgtaataataataaaaatacctctctctcttcttctt
ccccaaatgcgaatatcgaaaaaccgttgattattacctctttttctgttttttttctctctctctcccgctca
tccaggttcttctactctttaaattgctacctctatcccatctttttcgtgtaaaatttggttcgcaatcaaaactgctaaa
acacattcccccaatctgtcttttttaattgaattttcaaaaaatttgatttcttgatttctcttgtaattctttaattt
tctcttttttttccccctggtagcaaatgtctagcgattctcttctttttttgttttaactttcacatctggccgattc
gaatcctccgtatcacacacacatagtaattacctccaaaattttactgaaagatgtgatccctctctgtctccctc
tacaacaacattattgtctgttgggtgtatattgccaccagctcgattttaaattaaacacatcgttttttctctttct
acttttttctcgaaaaatttaacaacacacaaaaaaatcttcaaaaaatctcagttttaaatggtgtggcaatatatcg
gatccccctctacaccagaacagcttctgcaatttcagagaatgattttcagattttcatatcacaggccccctttttt
gctgtgtttttctcactctctcttcttcttcttcttcttcttcttcttcttcttcttcttcttcttcttcttcttct
ttccaaattcttctggctatttctgattttcgagttcatattctctacgtctcaacttctctcgcgccacgccccctttt
tcgtctccctccgcccccaatatattgcgactgtatgatgatgatgatgatttaataaaaa

Fig. 13B

MMEMLVDOGTDASSASTSTSSVSFRGADTFMNTFPDDVMMNDDMEPIPRDR
CNTWPMRRPQLEPPLNSSPIIHEQIPEEDADLYGSNEQCGQLGGASSNGST
AMLHTPDGNSNSHQTSPFSDFRMSESPDDTVSGKKTTRRRNAWGNMSYAEI
TTAIMASPEKRLTLAQVYEWVQNVVPYFRDKGDSNSSAGWKNISIRHNLSLH
SRFMRIQNEGAGKSSWWVINPDAKPGMNPRTRETSNTIETTAKAQLKSR
RGAKKRIKERALMGSLHSTLNGNSIAGSIQTI SHDLYDDDSMQGAFDNVPS
SFRPRTQSNLSIPGSSSRVSPAIGSDIYDDLEFPSSWVGESVPAIPSDIVDR
TDQMRIDATTHIGGVQIKQESKPIKTEPIAPPPSYHELNSVRGSCAQNP LL
RNP IVPSTNFKPMPLPGA YGN YQNGGITPINWLSTSNSSPLPGIQSCGIVA
AQHTVASSALPIDLENLTLPDQPLMDTMDVDALIRHEL SQAGGQHIHFDL

Fig. 14A

MQQYIYQESSATIPHHHLNQHNPNYPHMPHHQLPHMQQLPQPLNLNMTT
LTSSGSSVASSIGGGAQCSPCAGSSSTAATNSSQQQQT VQGMLAASVPCSS
SGMTLGMSLNL SQGGGMPAKKKRCRKKPTDQLAQKPNPWGEESYSIIA
KALESAPDGR LKLEIYQWFS DNI PYFGERSSPEEAAGWKNISIRHNLSLH
RFMRIQNEGAGKSSWWVINPDAKPGMNPRTRETSNTIETTAKAQLKSR
GAKKRIKERALMGSLHSTLNGNSIAGSIQTI SHDLYDDDSMQGAFDNVPS
SFRPRTQSNLSIPGSSSRVSPAIGSDIYDDLEFPSSWVGESVPAIPSDIVDR
TDQMRIDATTHIGGVQIKQESKPIKTEPIAPPPSYHELNSVRGSCAQNP LLR
NP IVPSTNFKPMPLPGA YGN YQNGGITPINWLSTSNSSPLPGIQSCGIVA
AQHTVASSALPIDLENLTLPDQPLMDTMDVDALIRHEL SQAGGQHIHFDL

Fig. 14B

1	cggaagccat	ggagctcgag	atctgattgc	tggacacgga	cggaactcgg	acgtatctcg
61	cagatgcatg	ttaacatttt	acatccacaa	ctgcaaacga	tggctcgagca	gtggcgaatg
121	cgagaacgac	catcgctgga	gaccgagaat	ggcgaaggat	cgctgtctct	ggaaaatgaa
181	gggtgtcgag	atatcatcac	tatgtgtcca	tccggagaag	tattagtgat	agttattccg
241	tggtttcttg	caaatgtgag	aacatcgcta	gaaatcaagc	tatcagattt	caaacatcaa
301	cttttccgaat	tgattgctcc	gatgaagtgg	ggaacatatt	cogtaaaagcc	acaggattat
361	gtgttcagac	agttgaataa	tttcggcgaa	attgaagtta	tatttaacga	cgatcaaccc
421	ctgtcgaaat	tagagctcca	cggcactttc	ccaatgcttt	ttctctacca	acctgatgga
481	ataaacaggg	ataaagaatt	aatgagtgat	ataagtcat	gtctaggata	ctcactggat
541	aaactggaag	agagcctcga	tgaggaaactc	cgtaatttc	gtgcttctct	ctgggctcgt
601	acgaagaaaa	cgtgcttgac	acgtggactt	gagggtacca	gtcactacgc	gttccccgaa
661	gaacagtagt	tgtgtgttgg	tgaatcgtgc	cggaaagatt	tggaaatcaa	agtcagggtc
721	gccaaagctga	gttatcagat	gttttgaga	aaacgtaaa	cggaatacaa	tggagtttgc
781	gagaaaaatga	tgaagattca	aattgaattc	aatccgaacg	aaactccgaa	attctctgct
841	cacacgtttc	tctacgaaat	gcgaaaattg	gatgtatacg	ataccgatga	tctctgcagat
901	gaaggatggt	ttcttcaatt	ggctggacgt	accacgtttg	tacaataatc	agatgtcaca
961	cttactgttt	attcgtgtgt	cgttcggaa	ctggaaagct	atcgaatgcc	tggattcggt
1021	gttcgccgac	aatcactagt	cctcaaaagac	tattgtcgcc	caaaaccact	ctcgaacca
1081	cattatgtga	gagcacacga	acgaaaactt	gctctagacg	tgctcagcgt	gtctatagat
1141	agcacaccaa	aacagagcaa	gaacagtgac	atggttatga	ctgattttcg	tccgacagct
1201	tcactcaaac	aaagttcact	ttgggacctt	gacgcgaatc	ttatgatagc	gcctgtgaat
1261	attttctggat	tcatattccc	ggccgacgtg	gatattgtac	ttcgaatcga	attcagtgta
1321	tatgtgggga	cactgagcgt	ggcatcaaaa	tctacaacaa	aagtgaatgc	tcaatttgca
1381	aaatggaata	aggaaatgta	cacttttgat	ctatacatga	aggatatgcc	accatctgca
1441	gtactcagca	ttcgtgtttt	gtacggaaaa	gtgaaattaa	aaagtgaaga	attcgaagtt
1501	ggttgggtaa	atatgtccct	aaccgatagg	agagatgaac	tacgacaagg	acaattttta
1561	ttccatctgt	gggtcctcga	accgactgcc	aatcgtagta	ggatcggaga	aaatggagca
1621	aggataggca	caaacgcagc	ggttacaatt	gaaatctcaa	gttatgggtg	tagagttcga
1681	atcccgatgc	gagagacaata	cacatatctc	gtcaagcacc	gaagtacttg	gagggaaaact
1741	ttgaatatata	tgggtgatga	ctatgagtcg	tgtatcagag	atccaggata	taagaagcct
1801	catagtcttg	tcaagaagca	tgaatctgga	attgtattag	aggaagatga	acaacgtcat
1861	gtctggatgt	ggagggagata	cattcaaaa	caggagcctg	attgtctcat	tgtgctctcc
1921	gaactcgcgt	ttgtgtggac	tgatcgtgag	aacttttccg	agctctatgt	gatgcttgaa
1981	aaatggaac	cgccagatgt	ggcagccgag	ttgactttgc	ttggaaaaag	ttgcacggat
2041	cgtgtgattc	gaaagtgttc	agtggaagaa	ttgaatgagc	agctgagccc	ggcacacatt
2101	catcttttca	tattgcctct	catacaggcg	ttgaagtacg	aaccgcgtgc	tcaatcggaa
2161	tgtggaatga	tgctcttgac	tagagctctc	tgccattatc	gaattggaca	tgcacttttc
2221	tggctgctcc	gtgcagagat	tgctcgtttg	agagattgtg	atctgaaaag	tgaagaatat
2281	cgccgtatct	cactttctgat	ggaagcttac	ctccgtggaa	atgaagagca	catcaagatc
2341	atcaccgcag	aagttgacat	ggttgatgag	ctcacacgaa	ctcagactct	tgtcaaagga
2401	atgccaaaaa	agttgtctac	gatgaaactg	cgtgacgagc	tgtcatcgat	tatgcataaa
2461	atggaaaaata	tggattctcc	actggatcct	gtgtacaac	tgggtgaaat	gataatcgac
2521	aaagccatgc	tcttaggaag	tgcaaaacgt	ccgttaatgc	ttcactggaa	gaacaaaaat
2581	ccaaagagtg	acctgcacct	tcggtctctg	gcaatgatct	tcaagatgtc	agacgatctt
2641	gcgcaggaca	tgtctttctt	tcaagttctc	gaagttatgg	ataacatctg	gaaggctgca

2701 aacattgatt gctgtttgaa cccgtacgca gttcttccaa tgggagaaat gattggaatt
 2761 attgaagttg tgcctaattg taaaacaata ttcgagattc aagttggaac aggattcatg
 2821 aatacagcag ttcggagtat tgatccttcg tttatgaata agtggattcg gaaacaatgc
 2881 ggaattgaag atgaaaagaa gaaaagcaaa aaggactcta cgaataatcc catcgaaaag
 2941 aagattgata atactcaagc catgaagaaa tattttgaaa gtgtcgatcg attcctatac
 3001 tcgtgtgttg gatattcagt tgccacgtac ataatgggaa tcaaggatcg tcacagtgat
 3061 aatctgatgc tcaactgaaga tgaaaaatat gtccacattg atttcggtca cattttggga
 3121 cacggaaaaga ccaaaacttg gatccagcga gatcgtcaac cgtttattct aaccgaacac
 3181 tttatgacag tgatttcgatc gggtaaatct gtggatggaa attcgcata gctacaaaaa
 3241 ttcaaaacgt tatgcgtcga agcctacgaa gtaatgtgga ataatcgaga tttgttcggt
 3301 tccttggtca ccttgatgct cggaatggag ttgcctgagc tgtcgacgaa agcggatttg
 3361 gatcatttga agaaaaccct ctctcgcaat ggagaaaagca aagaagaagc gagaaagttt
 3421 ttgcgtggaa tctacgaaga agccttcaat ggatcatggg ctacaaaaac gaattggctc
 3481 ttccacgcag tcaaacacta ctga

Fig. 15 (sheet 2 of 2)

1 RKPWSSRSDC WTRTELRRIS QMHVNILHPQ LQTMVEQWQM RERPSLETEN GKGSLLLENE
 61 GVADIITMCP FGEVISVVPF WFLANVRTSL EIKLSDFKHQ LFELIAPMKW GTYSVKPQDY
 121 VFRQLNNFGE IEVIFNDDQP LSKLELHGTF PMLFLYQPDG INRDKELMSD ISHCLGYSLD
 181 KLEESLDEEL RQFRASLWAR TKKTCLTRGL EGTSHYAFPE EQYLCVGESC PKDLESKVKA
 241 AKLSYQMFWR KRKAEINGVC EKMMKIQIEF NPNETPKSLL HTFLYEMRKL DVYDTDDPAD
 301 EGWFLQLAGR TTFVTNPDVK LTSYDGVRS LESYRCFGFV VRRQSLVLKD YCRPKPLYEP
 361 HYVRAHERKL ALDVLVSVID STPKQSKNSD MVMTDFRPTA SLKQVSLWDL DANLMIRPVN
 421 ISGFDFPADV DMYVRIEFSV YVGTLTASK STTKVNAQFA KWNKEMYTFD LYMKDMPPSA
 481 VLSIRVLYGK VKLKSEEFV GWVNMSLTDW RDELROGQFL FHLWAPEPTA NRSRIGENGA
 541 RIGTNAAVTI EISSYGGVRV MPSQGQYTYL VKHRSTWTET LNMIGDDYES CIRDPGYKKL
 601 QMLVKKHESG IVLEEDEQRH VWMWRRYIQ QEPDLLIVLS ELAFVWTDRE NFSELYVMLE
 661 KWKPPSVAAA LTLGKRCTD RVIRKFAVEK LNEQLSPVTF HLFILPLIQA LKYEPRQAQE
 721 VGMMLLTRAL CDYRIGHRLF WLLRAEIALR RDCDLKSEY RRISLMEAY LRGNEEHIKI
 781 ITRQVDMVDE LTRISTLVKG MPKDVATMKL RDELRISSHK MENMDSPLDP VYKLGEMIID
 841 KAIVLGSAKR PLMLHWKNKN PKSDLHLFFC AMIFKNGDDL RQDMLVLQVL EVMDNIWKAA
 901 NIDCCLNPYA VLFMGEMIGI IEVVPNCKTI FEIQVGTGFM NTAVRSIDPS FMNKWIRKQC
 961 GIEDEKKKSK KDSTKNPIEK KIDNTQAMKK YFESVDRFLY SCVGYSVATY IMGIKDRHSD
 1021 NLMLTEDGKY VHIDFGHILG HGKTKLGIQR DRQPFILTEH FMTVIRSGKS VDGNSHELQK
 1081 FKTICVEAYE VMWNNRDLFV SLFTLMLGME LPSELSTKADL DHLKKTFLFCN GESKEEARKE
 1141 FAGIYEEAFN GSWSTKTNWL FHAVKHY

Fig. 16

**CONVERGENT TGF- β AND INSULIN SIGNALING
ACTIVATE GLUCOSE-BASED METABOLISM GENES**

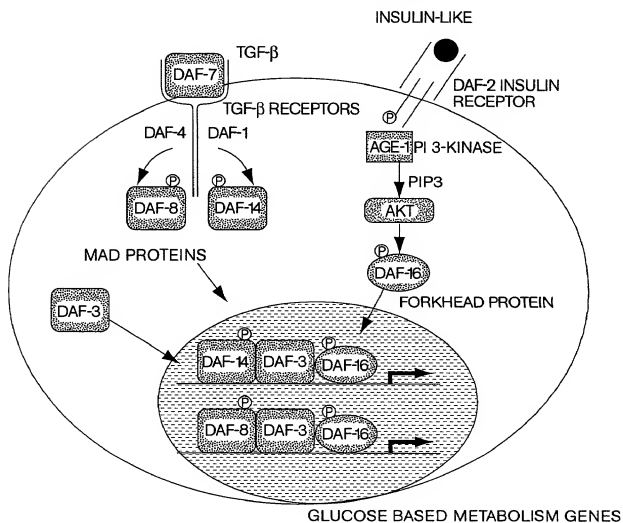


Fig. 17

IN PHEROMONE, NO TGF β OR INSULIN-LIKE SIGNALS
CAUSES REPRESSION OF ANABOLIC GENES

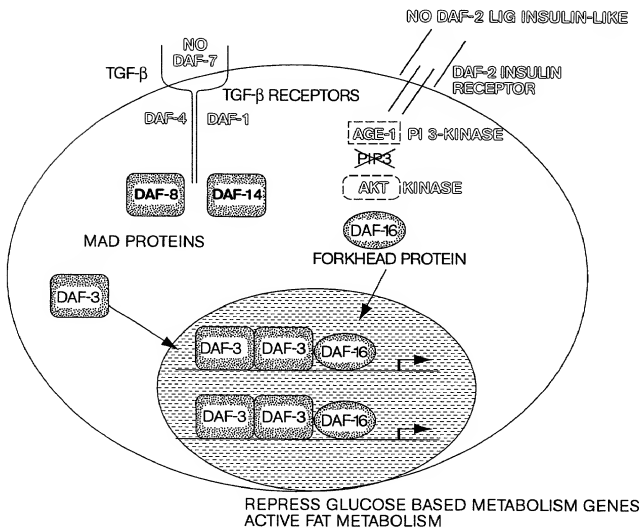


Fig. 18

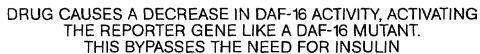
[illegible]

Fig. 19

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	

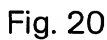


Fig. 20

[illegible]

Fig. 21A (sheet 1 of 3)

Hnf3a	SPITWAIQRA	PSRLTISEI	YOMIMDLFPY	WONSTRHS	LSLND	227		
Hnf3g	SPITWAIQCA	PKGVLTSEI	YOMIMDLFPY	WONSTRHS	LSLND	171		
D16123a467891011	ELITWALMAS	PERKITLQAV	YEMVONVPEY	AGWKNSTRHN	LSLHS	205		
Afx	D1612567891011	DHARALESA	PDGLIKNEH	YOMFSDNIPY	AGWKNSTRHN	LSLHS	330	
Fkhr	ELISGATESA	PERKITLQAV	YEMVAVRVEY	AGWKNSTRHN	LSLHS	158		
Consensus	DIITRALES	ARLITSEI	YEMVAVRVEY	AGWKNSTRHN	LSLHS	221		
	-TIT-AI-A	P-KRLT-I	Y-W----	AGWKNSTRHN	LSLHS	330		
Hnf3a	CEVKVARSPP	KPKGSSWTL	HPDSG	FENGCVLRRO	KRFKC	269		
Hnf3g	CEVKVARSPP	KPKGSSWTL	HPDSG	FENGCVLRRO	KRFKL	213		
D16123a467891011	REMNON..E	GAKGSSWVL	NP.D.AKGMN	LETTMAOLE	KSRRG	257		
Afx	D1612567891011	REMNON..E	GAKGSSWVL	LETTMAOLE	KSRRG	382		
Fkhr	KEIRUNH..E	ATGKSSWML	NPEGKSGKA	MPSSSLRLRG	RSKAP	208		
Consensus	KEIRUNH..E	GKSSWML	NPEGKSGKS	MPSSSLRLRG	RSKAA	271		
	-E-V-N-N-E	--GKSSW-L	NP--GK-G-	MPSSSLRLRG	RSKAA	271		
Hnf3a	EKOPGAG...	GKGSGSGGS	GAKGPPSRK	DPSGSMPEA	KTGQL	321		
Hnf3g	EKVKVKG...	GGGASTRNG	TGSAASTTTP	AATVETSP..	.....	248	
D16123a467891011	AKKRKERAL	MGSEHSTLNC	NSIAGSIQTI	SHLDYDDDSM	QCAFDNVPSS	FRPRT	312	
Afx	D1612567891011	AKKRKERAL	MGSEHSTLNC	NSIAGSIQTI	SHLDYDDDSM	QCAFDNVPSS	FRPRT	437
Fkhr	KKRP.....	SVLPAPPEG	ATPTPYGHE	AKWGSPPCSR	NREEADMWT	FRPAS	256	
Consensus	KKKA.....	.S.LQSGQEG	AG.DSGSQF	SKWPAAPGSH	SNDDFDNWST	FRPRT	317	
	-KK-----	-A-----G	-D-----G-	SKWPAAPGSH	SNDDFDNWST	FRPRT	440	
Hnf3a	EGAPAPGPA	SPQTLDSGA	TATGGASELK	TPASSTAPPI	SSGPGALASV	PASHP	376	
Hnf3g	.QPPPPAPAP	EAQGGEDVGA	LDCGS	.PASSTP...	SSGPGALASV	PASHP	278	
D16123a467891011	QSNUS.....	.....	IPGSS.SRVS	PAIGS.....	.....	331
Afx	D1612567891011	QSNUS.....	IPGSS.SRVS	PAIGS.....	.....	456	
Fkhr	SSNASSVSVR	LSPLRPESEV	LAGE.....	IPASV..SYA	GGVPPPLN..	EGL	300	
Consensus	SSNASTISGR	LSPLMTEQDD	LGEGDVHSMV	YPPSA.AKMA	STLPLSEIS	NPNM	371	
	-SN-S-	YPPSA.AKMA	STLPLSEIS	NPNM	495	
Hnf3a	ANGIAPHESQ	LHLKGDPHYS	FNHFFSINN	MSS.SEQQHK	LDFKAYEQAL	QYSPV	430	
Hnf3g	.YFTGILPL	GDCLKDAPYN	FNHFFSINN	MSEQTAPPK	LD.....V	GFGGM	324	
D16123a467891011	.DIVDILPL	.PSWVGESV	PAIP.....	.....	.....	351
Afx	D1612567891011	.DIVDILPL	.PSWVGESV	PAIP.....	.....	476	
Fkhr	E.LIGLILIT	SSHLSLRG	LSG.....	PSLQHPGVG	PKHTV	337	
Consensus	ENLLDNALL	SSFTSLTVST	QSSHEGTMQ	TPCYSFAPPN	TSLSNPSPNY	OKYTV	426	
	---D-DS-	-----S-	-----E-	TPCYSFAPPN	TSLSNPSPNY	OKYTV	550	

Fig. 21A (sheet 2 of 3)

Hnf3a	GSTLPASLPL	GSASVTRSP	IEP	SALEPAY	YQGVSRPVM	NTS	473
Hnf3g	GAE	.....	GGEGGV	YQGLYSRSL	NAS	.....	347
D16123a467891011	SDIVD	RTDQMRIDAT	THIGCVQ	IKQESKPIK	TEPIAPPSPY	HELNS	397
D1612567891011	SDIVD	RTDQMRIDAT	THIGCVQ	IKQESKPIK	TEPIAPPSPY	HELNS	522
Afx	SSSLFSP	AE	GPLSRGSGCF	SSQALEALP	ASDTAPPAD	VLMTQ	381
Fkhr	QSSMSPLPQ	MPILQTLQDNK	SSYCGMSQYN	CAPOLLKELP	ASDSPGH..N	DIMTP	479	
Consensus	.....S	.....	GG	.....S	.....B	.....	605
Hnf3a	.....	.....	.....	.....	.....	.....	473
Hnf3g	VRGSCAQP	LRPRPIVPS	TNEKPMPLPG	AYGNQNGCI	TPINWLSTSN	SSPLP	347	
D16123a467891011	VRGSCAQP	LRPRPIVPS	TNEKPMPLPG	AYGNQNGCI	TPINWLSTSN	SSPLP	450	
D1612567891011	VRGSCAQP	LRPRPIVPS	TNEKPMPLPG	AYGNQNGCI	TPINWLSTSN	SSPLP	575	
Afx	VDPLSCAPT	LLP	.....LGG	LPSS..SKLA	TPVGLC	PKPIE	416
Fkhr	VDPGVAQPNIS	RVPQGNVMMG	PNSVMSTYGS	QASH..NKMM	NPSSTHPGH	AQOTS	532	
Consensus	V---O	---	---	---	---	---	660	
Hnf3a	.....	.....	.....	.....	.....	.....	473
Hnf3g	.....	.....	.....	.....	.....	.....	347
D16123a467891011	GIQSCGIVAA	QHTVASSSAL	PIDLENTLTP	DQPLMDTN	.....	.....	488
D1612567891011	GIQSCGIVAA	QHTVASSSAL	PIDLENTLTP	DQPLMDTN	.....	.....	613
Afx	ARGESSLYPT	LSMIAPPVPM	AS	ALIPKALGT	PVLTPTTEAA	S	458	
Fkhr	AVNGRPLEHT	VSTMPTSGM	NRLTOVKTPV	QVPLPHPMOM	SALGCVSSVS	SCNGY	587	
Consensus	.....	.....	---	---	---	---	715
Hnf3a	.....	.....	.....	.....	.....	.....	473
Hnf3g	.....	.....	.....	.....	.....	.....	347
D16123a467891011	.....	.....	.....	.....	.....	.....	510
D1612567891011	.....	.....	.....	.....	.....	.....	635
Afx	.....QDR	MPQDLDLNMY	MENLEQMDN	ISDLMDGE	GLDENFEPDP	.....	501
Fkhr	GRMGLLHQEK	LPSDLD.GMF	IERLDCQMES	IERLNDLDGD	TLDNFEDNVL	PNQSF	641	
Consensus	.....	.....	---	---	---	---	770
Hnf3a	.....	.....	.....	.....	.....	.....	473
Hnf3g	.....	.....	.....	.....	.....	.....	347
D16123a467891011	.....	.....	.....	.....	.....	.....	510
D1612567891011	.....	.....	.....	.....	.....	.....	635
Afx	.....	.....	.....	.....	.....	.....	501
Fkhr	PHSVKTTTHS	WVSG	655	.....	.....	.....	784
Consensus	.....	---	---	---	---	---	784

Fig. 21A (sheet 3 of 3)

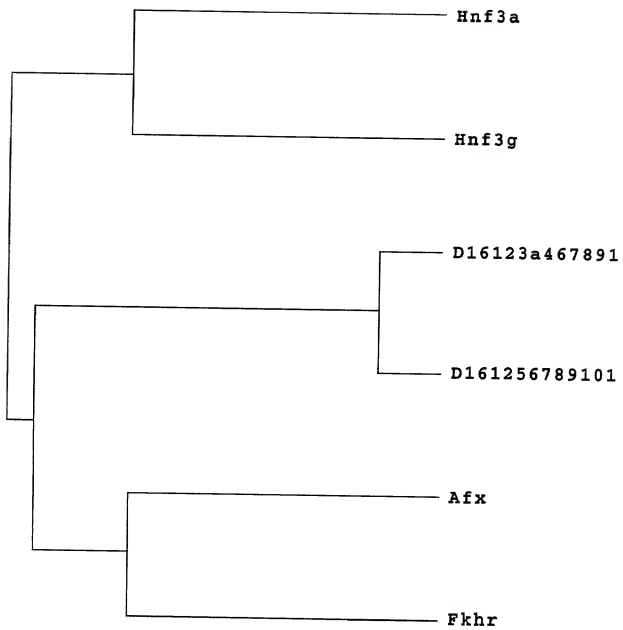


Fig. 21B

**INJECTION OF OF DAF-7 BYPASSES OBESITY-INDUCED
DEFECTS IN INSULIN-REGULATION OF METABOLISM**

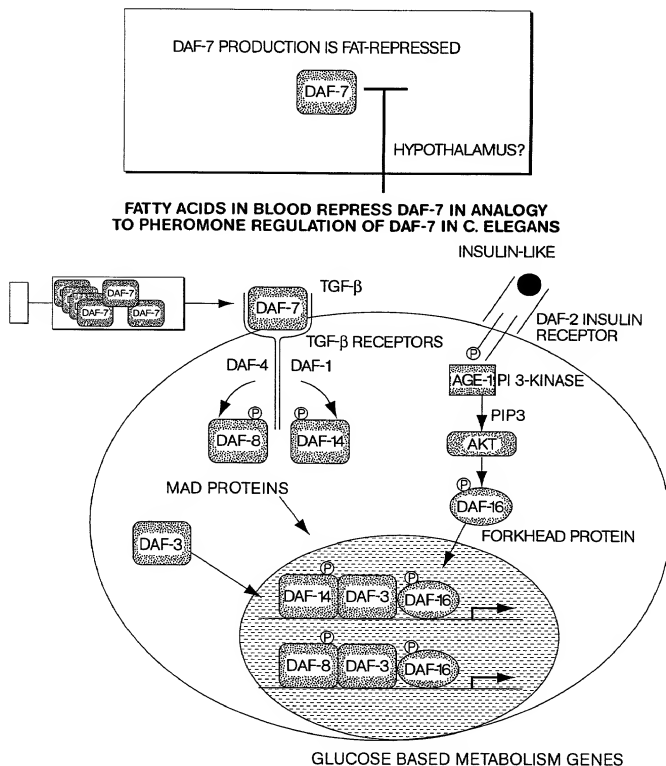


Fig. 23

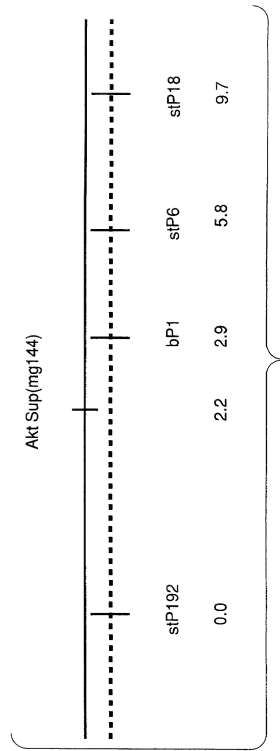


Fig. 24

Comparison of the human AKT protein sequence to the cosmid sequence C12D8, located in the genetic interval where sup(mg144) maps. Numbering in the AKT protein sequence by amino acid residues, and in the cosmid sequence by nucleotide position.

Score = 450 (207.4 bits), Expect = 5.2e-165, Sum P(7) = 5.2e-165
Identities = 79/121 (65%), Positives = 97/121 (80%), Frame = +1

Query: 319 EVLEDNDYGRAVDNWGLGVVYEMMCGRLPFFYNQDHEKLFELIMEEIRFPRTLGPEAKS 378
+VL+D+DYGR VDWVG+GVVYEMMCGRLPFY++DH KLFELI+ ++RFP L EA++
Sbjct: 33685 QVLDDHDYGRCDVWVG+GVVYEMMCGRLPFFYKDHKLFELIMAGDLRFPKSLSQEART 33864

Query: 379 LLSGLLKDPQTQRLGGGSEDAKEIMQHRFFANIVQDVYEKKLSPFFKPQVTSSETDTRYFD 439
LL+GLL KDPTQRLGGG EDA EI + FF + W+ Y K++ PP+KP V SETDT YFD
Sbjct: 33865 LLTGLLVKDPQTQRLGGGPEDALEICRADFFRTVDWEATYRKEIEPPYKPNVQSETDTSYFD 34047

Score = 256 (118.0 bits), Expect = 5.2e-165, Sum P(7) = 5.2e-165
Identities = 48/66 (72%), Positives = 59/66 (89%), Frame = +1

Query: 146 TMNEFEYLKLLKGFTGKVLVKEKATGRYYAMKILKKEVIAKDEVAHTLTENRVLQNS 205
TM +P++LK+LGKGTGKVL K E K T + YA+KILKK+VI+A++EVAHTLTENRVLQ
Sbjct: 32314 TMEDFDPLKVLKGFTGKVLCKEKRQKLYAIKILKKDVIAREEVAHTLTENRVLQRC 32493

Query: 206 RHPFLT 211
+HPFLT
Sbjct: 32494 KHPFLT 32511

Score = 190 (87.6 bits), Expect = 5.2e-165, Sum P(7) = 5.2e-165
Identities = 36/45 (80%), Positives = 37/45 (82%), Frame = +2

Query: 276 KLENMLDKDGHIKITDFGLCKEGIKDGATMKTFCGTPEYLAPEV 320
KLENL+LDKDGHIKI DFGLCKE I G TFCGTPEYLAPEV
Sbjct: 33509 KENLLLDKDGHIKIADFGCLKKEISFGDKTSTFCGTPEYLAPEV 33643

Score = 188 (86.7 bits), Expect = 5.2e-165, Sum P(7) = 5.2e-165
Identities = 37/57 (64%), Positives = 42/57 (73%), Frame = +3

Query: 209 FLTALKYSFQTHDRLCFVMEYANGGELFFHLSRERVFSEDRARFYGAIEVSALDYLH 265
+ LKYSFQ LCFVM++ANGGELF H+ + FSE RARFYGAIEV AL YLH
Sbjct: 32667 YFQELKYSFQEQHYLCFVMQFANGGELFTHVRKCGTFSEPRARFYGAIEVLALGYLH 32837

Score = 166 (76.5 bits), Expect = 5.2e-165, Sum P(7) = 5.2e-165
Identities = 29/59 (49%), Positives = 42/59 (71%), Frame = +1

Query: 53 NNFSVAQCQLMKTERPRPNTFIIIRCLQWTTVIERTFHVETPEEREWATAIQTVDGLK 111
+ F++ Q M E+PRPN F++RCLQWTTVIERTF+ E+ E R+ W AI+++ K
Sbjct: 31846 STFAIFYFTMLFEEKPRPNFMVRCLQWTTVIERTFYAESAEVQRWIHAIESISKYK 32022

Score = 134 (61.8 bits), Expect = 5.2e-167, Sum P(8) = 5.2e-167
Identities = 24/33 (72%), Positives = 30/33 (90%), Frame = +3

Query: 210 LTALKYSFQTHDRLCFVMEYANGGELFFHLSRE 242
L LKYSFQT+DRLCFVME+A GG+L++HL+RE
Sbjct: 33156 LQELKYSFQTNDRLCFVMEFAIGGDLYHLNRE 33254

Fig. 25



Fig. 26A

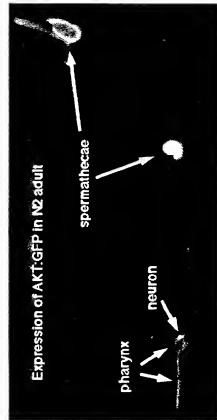


Fig. 26B

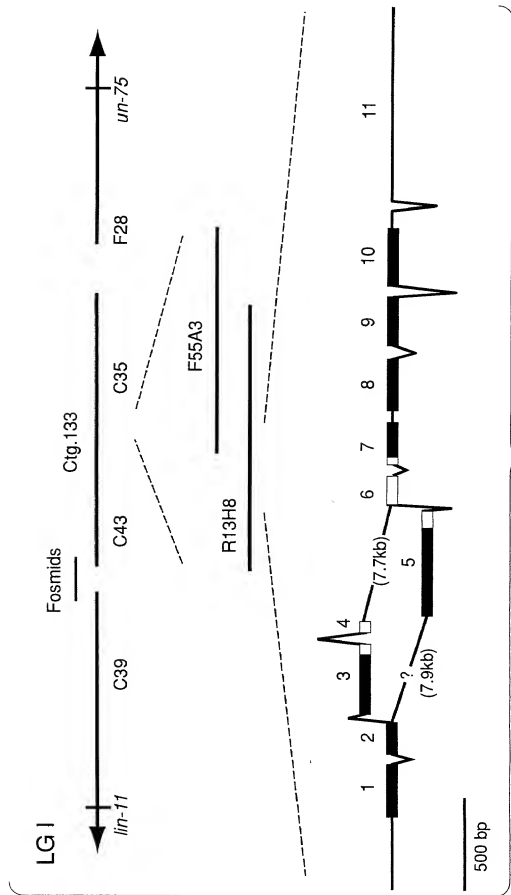


Fig. 27